Parks Canada Parcs Canada

Label Evaluation

by

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Introduction

There is a need for determining the best available labelling method for textiles. The object of this experiment was to test several labelling methods to determine their resistance to washing and dry-cleaning. The labelling methods consist of several marking pens and typewriter ribbons on various support materials. The results from this experiment are summarized in Table I, and the recommendations are below.

Recommendations

The recommended supports are polyethylene paper (Nalgene) and Reemay. The KFR typewriter ribbon is the best typewritten marking method. The best handwritten marking methods are the Tailorform Laundry marker and the Sharpie waterproof black felt pen.

Materials Tested

Typewriter ribbons tested:

Burroughs Nu-Kote typewriter ribbon (BURT)
- available from most office supply stores

KFR-150 typewriter ribbon (KFRT) manufactured by Barouh Eaton
- available from most office supply stores

Markers tested:

Sharpie waterproof black felt pen (SHAR) manufactured by Sandford
- available from Today's Business Products

Tailorform Laundry Marker No. 529 (TAIL)
- available from most fabric stores

Supports tested:

Polyethylene paper (PY) made by Nalgene
- available from Canlab Laboratory Equipment

Reemay textile (RY)
- available from Les Textiles H.T.C. Ltée, 80 Est. St. Viateur, Montréal, Qué, H2T 1A6

Methods Tested

Each labelling method was tested in the following treatments:

A) The label was submersed for 15 minutes in dry -cleaning solvent (1,1,1,-trichloroethane) with occasional agitation, then air dried.

B) The label was submersed for 15 minutes in dry-cleaning solvent (1,1,1,-trichloroethane) with occasional agitation, then air dried. Following the dry-cleaning the label was placed in boiling tap water with Orvus soap for 15 minutes, then air dried.

C) The label was submersed for 15 minutes in dry-cleaning solvent (1,1,1,-trichloroethane) with occasional agitation, then air dried.

TABLE I: Results from Tests Performed on Marking Methods

Support	Pen, Ink Ribbon	Point	Spread	A		B		C		D		E	
				Dry Clean		Dry Clean Soap Wash Tap		Dry Clean Soap Wash Dist.		Acetone		Ethanol	
				Loss	Run	Loss	Run	Loss	Run	Loss	Run	Loss	Run
REEMAY	TAIL	**	**	**	**	**	**	**	**	**	*	*	**
	SHAR	*	**	**	**	**	**	**	**	**	*	*	**
	BURT	**	**	X	**	X	**	X	**	*	**	**	**
	KFRT	**	**	**	**	**	**	**	**	*	**	**	**
POLYPAPER (Nalgene)	TAIL	**	**	**	*	**	*	**	*	**	X	**	*
	SHAR	*	**	**	**	**	**	**	**	**	*	**	*
	BURT	**	**	X	**	X	**	X	**	**	**	**	**
	KFRT	**	**	**	**	**	**	**	**	**	**	**	**

Legend

Point:

fine point **
medium point *
broad point X
illegible XX

Spread: (does it blur on marking)

no spread **
some spread *
much spread X
illegible XX

Ability to withstand washing:

Loss

remains unchanged after washing **
some decrease in intensity after washing *
mark remains but very faint X
complete loss of mark XX

Run

mark does no run on washing **
mark runs on washing *
mark runs badly X
mark becomes illegible XX

Following the dry-cleaning the label was placed in boiling distilled water with Orvus soap for 15 minutes, then air dried.

D) The label was submersed in acetone for 15 minutes with occasional agitation, then air dried.

E) The label was submersed in ethanol for 15 minutes with occasional agitation, then air dried.

Results and Discussion

The results from this experiment (Table I) indicate that the KFR typewriter ribbon on polyethylene paper (Nalgene) or Reemay is a good labelling method. The other typewritten label using the Burroughs typewriter ink faded in all tests and should not be used as a permanent marking method. The typewritten labels had processing advantages over the handwritten labels. The typewritten labels were neater, smaller and required less time to produce.

The handwritten labels using the Sharpie waterproof pen and the Tailorform Laundry marker are acceptable marking pens on polyethylene paper (Nalgene) or Reemay. The Sharpie pen and the Tailorform marker both bled in acetone, however, acetone is not used in a normal washing and dry-cleaning process. The Sharpie pen has a thick point which has an advantage and a disadvantage. The advantage is that the label is clearly visible. The disadvantage is that a large sized label may be required to include all the necessary information.

The two types of supports, Nalgene polyethylene paper and Reemay, used in this experiment are both acceptable. The labels using polyethylene paper are clearer and sharper than the labels using Reemay, however, the Reemay labels are more flexible than the polyethylene paper labels.

The results from the C.C.I. experiments (Appendix I) indicated that the typewriter ribbon "Midcity Permanent Laundry Ink" was the best marking method and that Reemay was the best support for the Midcity ink. The "Midcity Permanent Laundry Ink"typewriter ribbon, however, is no longer available. The second best labelling method, as indicated by C.C.I. tests, was the Tailorform Laundry marker on Reemay or polyethylene paper (Tyvek).

The Tailorform Laundry marker was the only marking pen that was tested by C.C.I. and Parks Canada. The results from both experiments indicate that it is a good marking method on polyethylene paper or Reemay. The Sharpie waterproof pen and the KFR typewriter ribbon that were tested in this experiment had comparable results to the Tailorform marker. All three marking methods can be recommended for the labelling of textiles.

The composition of commercial products may vary from batch to batch, therefore it is recommended that the ink and support from each new batch of material be tested by using the experimental procedure used in this report.

Appendix I C.C.I. reports Nos. CPR 63, 79, 113

Government of Canada / Gouvernement du Canada

MEMORANDUM NOTE DE SERVICE

TO / A: Ann Krahn
Eva Burnham

FROM / DE: David Grattan,
Acting Chief,
Conservation Processes Research.

SECURITY CLASSIFICATION - DE SÉCURITÉ:

OUR FILE - NO. DE RÉFÉRENCE: CPR #63

YOUR FILE - VOTRE RÉFÉRENCE:

DATE: April 23, 1980.

SUBJECT / OBJET:

Krylon has been previously analyzed by ARS[1] as being a copolymer of methyl and n-butyl methacrylates. The infrared spectrum is identical to the Rohm & Haas resin, acryloid B66. (Another resin which also has this composition is the DuPont Elvacite 2013).

Rohm & Haas supplies Borden with acrylic resins[2], and markets only one copolymer of methyl and nbutyl methacrylate. It seems quite possible that Krylon crystal clear spray contains Acryloid B66.

B66 is insoluble in water, but is soluble in trichloroethylene, methylene chloride, carbon tetrachloride and ethylene dichloride. It therefore will certainly be soluble in perchloroethylene. Thus dry-cleaning will certainly affect the label. (It is a good general rule that acrylic polymers dissolve or will be softened by chlorinated hydrocarbons).

Since the Krylon method was under some doubt, a series of labelling methods were tested for resistance to washing procedures. Four samples of each label were prepared: A, B, C, and D.

A was the control.
B, C, and D were soaked in perchloroethylene for 15-30 minutes with occasional stirring and then were removed and dried.
C was placed in hot tap water containing Orvus neutral soap. It was kept hot (up to about 90°C) for about 20 minutes and then removed and dried.
D was treated similarly in hot distilled water containing Orvus soap.

Results (i) Supports These were:

Woven polyethylene (sometimes called waterproof paper)
Unbleached cotton
Bleached, sized cotton
Krylon sprayed, bleached, sized cotton, with Krylon spray coating over label
Bleached, sized cotton, with Krylon spray coating over label
Biased cotton tape
Rayon tape
Nylon tape
Polyester tape

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The woven polyethylene was quite a good support, but was stiff and unyielding, inclined to crease irreversibly during handling and to curl in dry cleaning solvent.

All of the cotton supports took labels well. Krylon coatings conveyed no noticeable advantages. (Dry cleaning removes the Krylon coating completely). The cotton fabrics were prone to fraying at the edges after washing. Biased cotton tape stretched badly on washing and distorted the lettering considerably. No differences were observed in the behaviour of bleached and unbleached cotton.

Rayon, Nylon and Polyester tapes were inclined to become unwoven at the ends, although the edges were very secure. Rayon tape proved to be a poor support and lost labels easily.

Results (ii) Markers Tested

Nalgene hab Pen No. 6310-0010 } Permanent-Waterproof-Designed for Nalgene } Plastic paper products }	(NALG.)
Schwann Stabilo Overhead Projection Pen 96-P	(SCHW.)
Staetdler Permanent	(STAD.)
Fisher Lab Marker Pen	(FISH.)
Dritz Bic Laundry Marker	(DRIZ.)
Tailor-Form Laundry Marker	(TAIL.)
Bic - Regular Black Ball Point	(BICA.)
Bic - Regular Blue Ball Point	(BICB.)
Cadomark	(CADK.)
Dixon Green Fibre Tip	(DIXN.)
Wax Marking Pencil	(WAXP.)
Pilot Fineliner Black	(PILT.)
Venus - Sanfords Sharpie	(VENU.)
HB Pencil	(PLHB.)
2H Pencil	(PL2H.)

Inks Tested

Pelikan: Black India Ink	(PELK.)
Higgins Black India Ink. P.	(HIGG.)
Grumbacher Black Ink	(GRUM.)

Typewriter Ribbons Tested

Traditional Ribbon from Manual Machine Red	(TRD.R)
Traditional Ribbon from Manual Machine Black	(TRD.B)
IBM self-correcting Carbon Ribbon	(IBM/C)
IBM Tl III Ribbon (not self-correcting)	(IBM/T)
Record Ink	(REC/D)
Carters Midnight Ribbon	(CART.)
Mid City Ribbon	(MIDY.)

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Tests

Point:	Fine Point	✓✓
	Medium Point	✓
	Broad Point	X
	Illegible	XX

Soread (Does the ink blur on marking?)

No Spread	✓✓
Some Spread	✓
Much Spread	X
Illegible	XX

Ability to withstand washing

Loss	Remains unchanged after washing	✓✓
	Some decrease in intensity after washing	✓
	Mark remains but very faint	X
	Complete loss of mark	XX
Run	Mark does not run on washing	✓✓
	Mark runs on washing	✓
	Mark runs badly	X
	Mark becomes illegible	XX

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BLEACHED COTTON WITH FINAL KRYLON COAT

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH									
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLHB									
PL2H									
STAD									
TAIL									
DRIZ									
WAXP									
PELK									
HIGG									
GRUM									
RECD									
CART									
TRDR	NA	✓✓	✓✓*	✓✓	X	✓	X	✓	
TRDB	NA	✓✓	✓✓*	✓✓	X	✓	X	✓	
IBMC	NA	✓✓	✓✓*	✓✓	XX	✓	XX	✓	
MIDY									

*All the Krylon dissolved out.

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH									
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLEB									
PL2E									
STAD									
TAIL									
DRIZ									
WARP									
PELK									
BIGG									
GRUM									
RECD									
CART	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
TRDR									
TRDB									
IBMC									
MIDY									

KRYLON SPRAYED BLEACHED COTTON WITH KRYLON COATING

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH									
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLHB									
PL2H									
STAD									
TAIL									
DRIZ									
WAXP									
PELK									
HIGG									
GRUM									
RECD									
CART									
TRDR	NA	✓✓	✓✓*	✓✓	X	✓	X	✓	
TRDB	NA	✓✓	✓✓*	✓✓	X	✓	X	✓	
IBMC	NA	✓✓	✓✓*	✓✓	XX	✓	XX	✓	
IBMT	NA	✓✓	✓✓*	✓✓	✓	✓	✓	✓	

*All the Krylon dissolved out.

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH									
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLHB									
PL2H									
STAD									
TAIL									
DRIZ									
WAXP									
PELK									
HIGG									
GRUM									
RECD									
CART	NA	✓✓	✓✓	✓✓	✓	✓	✓	✓	
TRDR									
TRDB									
IBMC									
MIDY									

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH	✓	X	✓✓	✓✓	X	✓	X	✓	
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLHB									
PL2H									
STAD									
TAIL	✓✓	✓✓	✓✓	✓✓	X	✓	X	✓	
DRIZ	✓✓	✓✓	✓✓	✓✓	XX	✓	XX	X	
WARP									
PELK									
HIGG									
GRUM									
RECD									
CART	NA	✓✓	✓✓	✓✓	XX	✓	XX	✓	
TRDR									
TRDB									
IBMC									
MIDY									

BLEACHED COTTON

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Soap Wash Tap Loss	Soap Wash Tap Run	Soap Wash Dist Loss	Soap Wash Dist Run	Comments
FISH	✓	✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLEB									
PL2H									
STAD									
TAIL									
DRIZ									
WARP									
PELK	NA	✓✓	✓✓	✓✓	✓	X	✓	X	
HIGG	NA	✓✓	✓✓	✓✓	✓	X	✓	X	
GRUM	NA	✓	✓✓	✓✓	✓	X	✓	X	
RECD	NA	X	✓	XX	X	✓	X	✓	Smudgy
CART	NA	✓✓	✓✓	✓✓	X	✓	X	✓	
TRDR	NA	✓✓	✓✓	✓✓	XX	✓	XX	✓	
TRDB	NA	✓✓	✓✓	✓✓	XX	✓	XX	✓	
IBMC	NA	✓✓	✓✓	✓✓	XX	✓	XX	✓	
MIDY	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
MIDY*	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	(STABLE IN ACETONE & ETHANOL)

* 120-0002-713-M

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH	✓	X	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
SCHW									
DIXN									
CADK									
PILT									
NALG									
VENU									
BICA									
BICB									
PLHB									
PL2H									
STAD									
TAIL	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
DRIZ	✓✓	✓✓	✓✓	✓✓	XX	✓	XX	✓	
WAYP									
PELK									
HIGG									
GRUM									
RECD									
CART	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
TRDR									
TRDB									
IBMC									
MIDY									

-TYVEK

WOVEN POLYETHYLENE

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH	✓	✓	✓✓	✓✓	✓✓	✓	✓✓	✓	
SCHW	✓	✓✓	✓✓	✓✓	✓✓	X	✓	X	
DIXN	✓	✓	XX	X					
CADK	X	✓	X	X					
PILT	✓✓	✓✓	✓✓	X	XX	NA	XX	NA	
NALG	✓✓	✓✓	✓✓	✓✓	✓	✓	✓	✓	
VENU	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
BICA	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
BICB	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
PLHB	✓✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	Faint Mark
PL2H	✓✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	Very Faint Mark
STAD	✓	✓✓	✓✓	✓✓	✓		✓	XX	
TAIL	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
DRIZ	✓✓	✓✓	✓✓	✓✓	XX	XX	XX	XX	
WAXP	X	✓✓	✓	✓✓	XX	✓	XX	✓	
PELK	NA	X	✓✓	✓✓	XX	X	XX	X	
HIGG	NA	X	✓✓	✓✓	X	X	X	X	
GRUM	NA	X	✓✓	✓✓	XX	X	XX	X	
RECD	NA	X	✓✓	X	✓	X	✓	X	
CART	NA	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
TRDR	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
TRDB	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	
IBMC	NA	✓✓	✓	✓✓	X	✓✓	X	✓✓	
MIDY									

Pen, Ink, Ribbon	Point	Spread	Dry Clean Loss	Dry Clean Run	Dry Clean Soap Wash Tap Loss	Dry Clean Soap Wash Tap Run	Dry Clean Soap Wash Dist Loss	Dry Clean Soap Wash Dist Run	Comments
FISH	✓	✓	✓✓	✓✓	✓	✓	✓	✓	
SCHW	✓	✓	✓✓	✓	X	X	X	X	
DIXN									
CADK									
PILT									
NALG	✓✓	✓✓	✓✓	✓✓	X	✓	X	✓	
VENU									
BICA									
BICB									
PLHB									
PL2E									
STAD	✓	✓	✓✓	✓	X	X	X	X	
TAIL	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
DRIZ	✓✓	✓✓	✓✓	✓	XX	✓	XX	✓	
WAXP									
PELK									
HIGG									
GRUM									
RECD									
CART	NA	✓✓	✓	✓✓	XX	✓	XX	✓	
TRDR									
TRDB									
IBMC									
MIDY #	NA	✓✓	✓✓	✓✓	X	✓✓	X	✓✓	(STABLE IN ACETONE & ETHANOL)

120-0002-713-M

Conclusions

For woven polyethylene, the best marker was the Tailorform; the following lists other acceptable markers in order of preference. TAIL > CART >TRDR = TRDB = VENU = BICA = BICB > NALG = FISH (Mid City - MIDY typewriter ribbon was not tested).

For Cotton, whether bleached or unbleached, the Tailorform marker was also excellent, but the Fisher pen was also good. Mid City typewriter ribbon also worked well. In order of preference, acceptable markers are

TAIL = MIDY > FISH

For Rayon, all markers fail.

For Nylon, the Tailorform marker works well.

In order of preference TAIL > CART.

For other supports only limited trials were carried out.

David Grattan.

References

1 A.R.S. 1615

2 "Acrylic Resin Solutions from Rohm & Haas Play an Important Role in the Production of Krylon's Push Button Spray Coatings". Rohm & Haas Reporter, March-April 1961.

Government of Canada / Gouvernement du Canada

MEMORANDUM NOTE DE SERVICE

TO / A: Anne Krahn
Ela Keyserlink,
Eva Burnham,
Julie Crawley.

FROM / DE: David Grattan,
Senior Conservation Scientist,
Conservation Processes Research.

SECURITY - CLASSIFICATION - DE SÉCURITÉ:

OUR FILE - NOTRE RÉFÉRENCE: CPR 113

YOUR FILE - VOTRE RÉFÉRENCE:

DATE: February 5, 1981.

SUBJECT / OBJET: Textile Labels

This is a continuation of previous request numbers CPR 79 and 63. The typewriter ribbon "Midcity Permanent Laundry Ink" and the "Tailorform" marker had proved to give marks which were stable in dry cleaning fluid, washing in boiling water with Orvus soap, acetone and ethanol or methanol. It was desired to retest these markers with the supports "Remay" polyester non-woven fabric, "Pellon" which is apparently similar to "Remay", and "Shape-Aid" which is also a non-woven polyester fabric and finally a similar non-woven 'synthetic', a mixture (or co-polymer?) of a nylon and a polyester. Further, the 'Fisher' lab marker and I.B.M. ribbon for a self-correcting typewriter (now in standard office use throughout North America), although not as successful as the above-mentioned markers were retested.

Experimental

The treatments were as before:

batch 1 was subjected to 15 minutes in dry-cleaning solvent (perchloroethylene) with occasional agitation removed, dried and mounted.

batch 2 was treated with a dry cleaning solvent as for batch 1, then placed in boiling tap water with Orvus soap, for 15 mins. with occasional agitation, then removed dried and mounted.

batch 3 was treated as for batch 2, with distilled water used in place of tap water.

batch 4 was soaked in acetone for 15 mins., with occasional agitation, removed, dried and mounted.

batch 5 was treated in ethanol in an identical manner to batch 4.

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Note Marker Codes

TAIL = Tailorform marker
FISH = Fisher lab marker
IBMC = I.B.M. self-correcting ribbon
MCLM = Mid City Permanent Laundry marking tape

See reports 79 and 63 for explanation of the Table.

Results

The results are shown in the table. All supports are satisfactory when used with MCLM, but only REMAY is satisfactory for the Tailorform marker. The Fisher marker was not satisfactory on any support. Curiously, IBMC, which failed badly on all previously tested supports, worked well on REMAY. The earlier poor results with IBMC on other supports such as cotton, and polyethylene means that it is hard to recommend its use.

As the footnote to the table suggests, it appears that these supports, except for Remay, appear to have some kind of coating which may not be desirable.

David Grattan.

SUPPORT	PEN, INK, RIBBON	Point	Spread	Dry Clean		Dry Clean Soap Wash Tap		Dry Clean Soap Wash Dist		Acetone		Ethanol	
				Loss	Run	Loss	Run	Loss	Run	Loss	Run	Loss	Run
REMAY (Polyester)	Fish	✓	X	✓✓	✓✓	✓✓	✓✓	✓	✓✓	X	✓	X	✓
	Tail	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓	✓✓
	IBMC	NA	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓✓	✓✓
	MCLM	NA	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
PELLON (Polyester)	Fish	✓	X*	✓✓	✓✓	✓	X	✓	X	X	X	✓	X
	Tail	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	X	✓	✓	✓
	MCLM	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓
SHAPE AID (Polyester)	Fish	✓	X*	✓✓	✓✓	✓	X	✓	X	X	X	X	✓
	Tail	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	X	✓	✓	✓
	MCLM	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
NYLON/ POLYESTER	Fish	✓	X*	✓✓	✓✓	✓	X	✓	X	✓	X	✓	X
	Tail	✓✓	✓✓	✓✓	✓✓	✓	✓✓	X	✓	X	✓	✓	✓
	MCLM	✓✓	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓

*A curious blurring effect took place on these supports with this marker. The inscription became surrounded with a yellow "aura" as if a chromatographic separation of the pigments had taken place.

Government of Canada / Gouvernement du Canada

MEMORANDUM NOTE DE SERVICE

Anne Krahn
Eva Burnham

FROM / DE: D. Grattan

SECURITY - CLASSIFICATION - DE SÉCURITÉ:

OUR FILE - NO/REFERENCE: CPR 79

YOUR FILE - V/REFERENCE:

DATE: August 1, 1980

SUBJECT / OBJET:

Testing of the Mid City Laundry Making Ribbon for resistance to various solvents and hot soapy water. This follows on from CPR 63.

The procedure used was the same as in #63, where the labels were placed in perchloroethylene(dry cleaning fluid) for 15 minutes and 1 sample dried, then placed in tap or distilled water containing Orvus soap and heated to the boiling point - this usually took 20-25 minues. The samples were then-dried and examined. Other samples were subjected to soakings in ethyl alcohol and acetone for 15 minute periods.

As the results in the table show, this is the best marking system tested so far. Nylon tape seems to be the best support, though the mark tends to blur slightly on this support. All are acceptable.

Tests

Spread (Does the ink blur on marking?)

No Spread	✓✓
Some Spread	✓
Much Spread	x
Illigible	xx

Ability to Stand Washing or soaking in Solvent

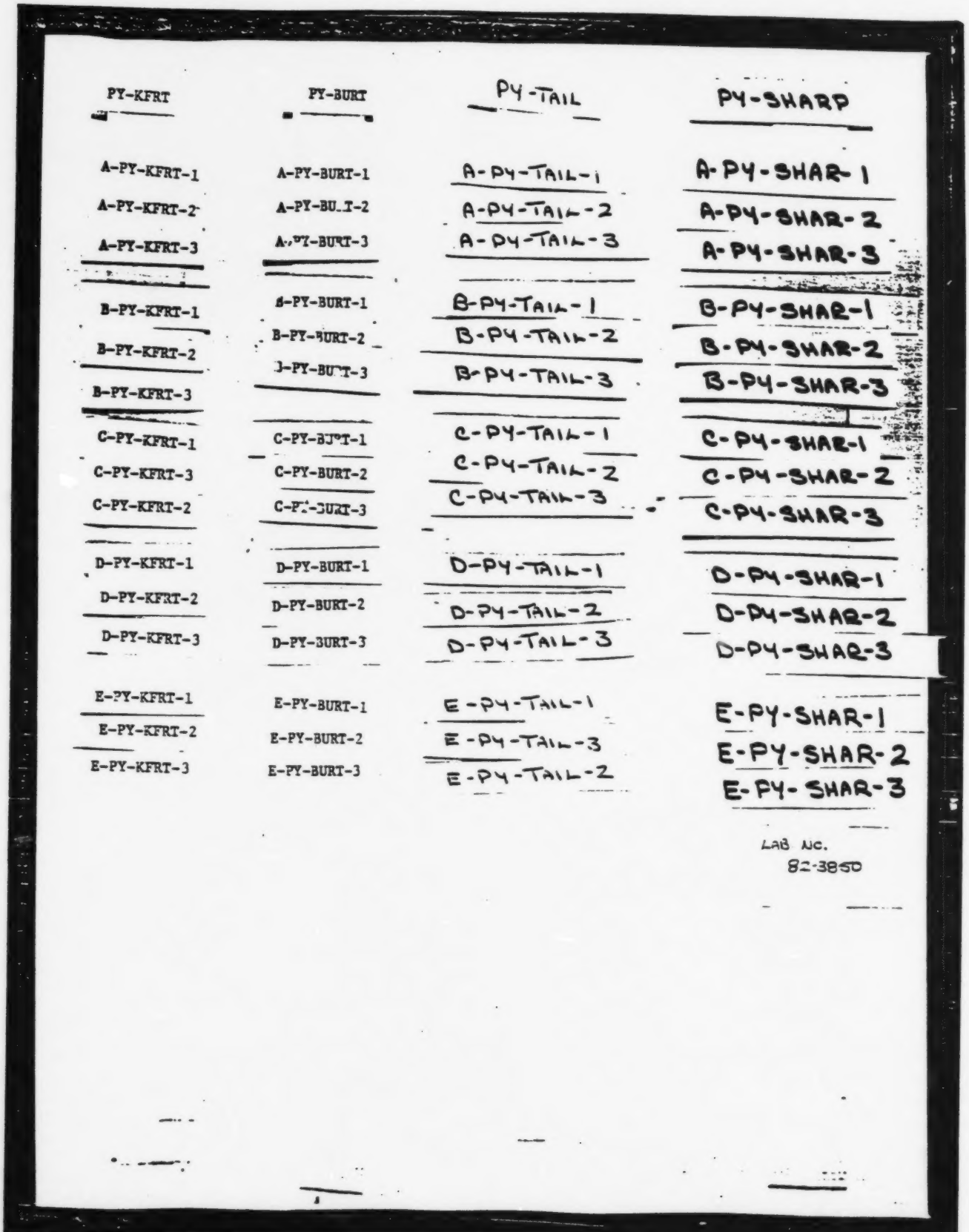
Loss	Remains undamaged after Washing	✓✓
	Some decrease in intensity after Washing	✓
	Mark remains, but faint after Washing	x
	Complete loss of mark after Washing	xx
Run	Mark does not run on washing	✓✓
	Mark runs on washing	✓
	Mark runs badly on washing	x
	Mark becomes illegible on washing	xx

...2

OSSD STANDARD FORM 320-1 7540-21-798-6996 FORMULE NORMALISÉE 320-1 DE L'OSS

SUPPORT	SPREAD	DRYCLEAN		DRYCLEAN SOAP WASH TAP		DRYCLEAN SOAP WASH DIST		ACETONE		ETHANOL	
		LOSS	RUN	LOSS	RUN	LOSS	RUN	LOSS	RUN	LOSS	RUN
Bleached Cotton	✓✓	✓✓	✓✓	×	✓✓	×	✓✓	✓✓	✓✓	✓✓	✓✓
Unbleached Cotton	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓
Nylon	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Woven Polyethylene	✓✓	✓✓	✓✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓

Appendix II Photographs of Labels after Tests



RY-KFRT	RY-BURT-	RY-TAIL	RY-SHAR
A-RY-KFRT-1		A-RY-TAIL-1	A-RY-SHAR-1
A-RY-KFRT-2		A-RY-TAIL-2	A-RY-SHAR-2
A-RY-KFRT-3		A-RY-TAIL-3	A-RY-SHARP-3
B-RY-KFRT-1		B-RY-TAIL-1	B-RY-SHAR-1
B-RY-KFRT-2		B-RY-TAIL-2	B-RY-SHAR-2
B-RY-KFRT-3		B-RY-TAIL-3	B-RY-SHAR-3
C-RY-KFRT-1		C-RY-TAIL-1	C-RY-SHAR-1
C-RY-KFRT-2		C-RY-TAIL-2	C-RY-SHAR-2
C-RY-KFRT-3		C-RY-TAIL-3	C-RY-SHAR-3
D-RY-KFRT-1		D-RY-TAIL-1	D-RY-SHAR-1
D-RY-KFRT-2		D-RY-TAIL-2	D-RY-SHAR-2
D-RY-KFRT-3		D-RY-TAIL-3	D-RY-SHAR-3
E-RY-KFRT-1		E-RY-TAIL-1	E-RY-SHAR-1
E-RY-KFRT-2		E-RY-TAIL-2	E-RY-SHAR-2
E-RY-KFRT-3		E-RY-TAIL-3	E-RY-SHAR-3

LAB. NO.
82-3950